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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,566	04/10/2001	Amotz Bar-Noy	2000-0218	7751

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EXAMINER	
PATEL, ASHOKKUMAR B	

ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/829,566	BAR-NOY ET AL.	
	Examiner	Art Unit	
	Ashok B. Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/12/2004 and 06/13/2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Application Number 09/829, 566 was filed on 04/10/2001. Claims 1-18 are subject to examination.

Response to Arguments

2. Applicant's arguments filed 11/12/2004 and 6/13/2005 have been fully considered but they are not persuasive for the following reasons:

Applicant's argument:

In rejecting independent claims 1 and 18, the Office Action indicates that the element of "transmitting the receiving procedure to the client" as claimed in claims 1 and 18 is disclosed in Payton at column 4, lines 37-41. The cited portion of Payton teaches:

> *"Broadcasting the fragments in accordance with the sequencing pattern enables the local server to reassemble the signal within one time interval from the subscriber's request . . . and provides approximately the minimum average bandwidth . . ."*

This portion of Payton merely teaches broadcasting the parts of a fragmented media stream - it does not disclose transmitting a receiving procedure to a client. Thus, the cited section of Payton does not teach that which it is cited for.

Examiner's response:

Please refer to the claim element

"computing a receiving procedure for the client;(col.4, lines 5-35)"

and then it continues to " transmitting the receiving procedure to the client;(col.4, lines 37-41)"

The reference teaches in col. 4, lines 10-14, "A fragmentor 22 segments the compressed signal 12 into a sequence of N numbered fragments 24 in which each fragment 24 is preferably tagged with its fragment number and title." Thus the reference teaches transmitting a receiving procedure to a client.

Applicant's argument:

As clearly taught in the specification of the present invention at page 5, line 150 to page 6, line 156:

"[T]he server 150 constructs a stream merging pattern and . . . returns a schedule of arrival times for a plurality of . . . streams . . . referred to herein as a receiving procedure. Therefore, the client 1 10 needs no further communication with the media server 150 and . . . can merely 'listen' to the identified multicast channel at the particular associated time periods represented in the receiving procedure."

This differs from the teaching of Payton. At no place in Payton does that reference teach transmitting a time schedule to a client. Thus, Payton does not teach all the elements of claims 1 and 18.

Examiner's response:

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the client 110 needs no further communication with the media server 150 and . . . can merely 'listen' to the identified multicast channel at the particular associated time periods represented in the receiving procedure.") are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Continuing on the teachings of the reference Payton from the above indicated Examiner's response, the reference teaches in col. 4, lines 18-25, " A sequencing processor 26 uses a channel packing algorithm (details of which are provided in connection with FIGS. 3 through 8) to generate a sequencing pattern 28, in which each fragment is assigned a broadcast period and a timing offset so that the first fragment is repeated every time interval, the second fragment is preferably repeated every two time intervals and so forth until the Nth fragment is repeated at least every Nth time interval. Thus the reference is effervescent in elucidating that the each fragment is tagged with fragment number, title, an assigned broadcast period and a timing offset. Thus the reference teaches "transmitting a time schedule to a client."

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5, 6, 8, 9, 10, 12-15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Payton (US 5, 831, 662).

Referring to claim 1,

The reference teaches a method of streaming media to a client comprising:

receiving a request from a client for a media stream; (col.3, lines 66-67 and col. 4, lines 1-5)

computing a receiving procedure for the client;(col.4, lines 5-35)

transmitting the receiving procedure to the client;(col.4, lines 37-41)

initiating a first multicast stream such that the client can utilize the receiving procedure to receive a first portion of the media stream from the first multicast stream (Fig.3, element 1 from channel 1, col.6, lines 5-21) and a second portion of the media stream from a second multicast stream (Fig.3, element 2 from channel 2, col.6, lines 5-21).

wherein said receiving procedure comprises a time schedule associated with the transmission of said first portion of said media stream and said second portion of said media stream. (col. 4, lines 18-25)

Referring to claim 2,

The reference teaches the invention of claim 1 wherein the client can further utilize the receiving procedure to receive a third portion of the media stream from a third multicast stream. (Fig.3, element 3 from channel 3, col.6, lines 5-21).

Referring to claim 3,

The reference teaches the invention of claim 1 wherein the receiving procedure is computed after a step of computing a merge tree incorporating the request from the client. (col.6, lines 43-67 and col.7, lines 1-9).

Referring to claim 5,

The reference teaches a method of streaming media to a plurality of clients comprising:

receiving reservation requests for a media stream from a plurality of clients (col.3, lines 23-26, the reference teaches near-on demand allowing digital selections to be broadcast frequently);

constructing a merge tree based on the reservation requests; scheduling a plurality of multicast transmissions of the media stream based on the merge tree. (col.6, lines 63-67 and col.7, lines 1-22)

transmitting to a first client in said plurality of clients a time schedule associated with said plurality of multicast transmissions. (col. 4, lines 18-25)

Referring to claims 6 and 8,

The reference teaches wherein the merge tree is constructed to minimize the cost of the merge tree, and wherein the merge tree is constructed to minimize the cost of a forest of merge trees further comprising the merge tree. (col.6, lines 63-67 and col.7, lines 1-22, col. 2, lines 18-22).

Referring to claim 9,

The reference teaches a method of streaming media to a plurality of clients comprising:

constructing a merge tree based on anticipated requests for a media stream (col.6, lines 33, the reference teaches that sequencing pattern for more than one selection., Fig.5);

scheduling a plurality of multicast transmissions of the media stream based on the merge tree. (col.6, lines 63-67 and col.7, lines 1-22)

transmitting to a first client in said plurality of clients a time schedule associated with said plurality of multicast transmissions. (col. 4, lines 18-25)

Referring to claim 10,

The reference teaches wherein the anticipated requests for the media stream are scheduled to arrive at every time unit. (col.2, lines 36-40).

Referring to claim 12,

The reference teaches wherein the merge tree is a static merge tree with a fixed number of nodes. (Fig.6, col.6, lines 62-64).

Referring to claim 13,

The reference teaches a method of streaming media to a client comprising:

receiving a request from a client for a media stream; (col.2, lines 36-49)

taking a first merge tree further comprising a right frontier and constructing a second merge tree which incorporates the request into the right frontier of the first merge tree; and (col. 6, lines 6, lines 62-64, "tree selection and expansion", Figs. 6 and 7)

scheduling a plurality of multicast transmissions of the media stream, including a multicast transmission to the client, based on the second merge tree. (col.6, lines 63-67 and col.7, lines 1-22).

transmitting to said client a time schedule associated with said multicast transmission to the client. (col. 4, lines 18-25)

Referring to claim 14,

The reference teaches wherein the second merge tree is constructed to minimize an incremental merge cost. . (col.6, lines 63-67 and col.7, lines 1-22, col. 2, lines 18-22).

Referring to claim 15,

The reference teaches wherein the second merge tree is constructed such that the request is represented as a node of a parent node in the first merge tree closest to the node. (col.8, lines 17-42, Figs. 6 and 7)

Referring to claim 18,

Claim 18 is a claim to a machine-readable medium comprising executable program instructions for performing a method on a computer of claim 1. Therefore claim 18 is rejected for the reasons set forth for claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4, 7, 11, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Payton (US 5, 831, 662) in view of Kermode et al. (herein after Kermode) (US 6, 018, 359).

Referring to claims 4, 7 and 11,

Keeping in mind the teachings of Payton as stated above, although the Payton teaches computing the fractal channel packing algorithm having an aspect of tree selection, it fails to specifically teach wherein the merge tree is a Fibonacci merge tree. The reference Kermode teaches, download and merge by stating "Segments are preferably

downloaded at a rate r(n) at least equal to the playback rate, and desirably faster than the playback rate. Operation of the invention in a regime where r(n)=1 is illustrated in FIG. 3. Each of a series of segments 0, 1, 2, 3 is repeatedly transmitted over an associated channel P0, P1, P2, P3. As shown in the figure, the segment 0 has a relative length of 1, segment 1 has a relatively length of 2, etc., in accordance with the truncated Fibonacci sequence noted above. The segments are not, however, downloaded synchronously. As a result, the shaded areas representing download are not contiguous with the partition loops. Instead, download of segment 0 is begun at an arbitrary time t-1 (e.g., when a subscriber has activated his set-top box) and continues into the next segment transmission." (col.7, lines 6-43). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Payton by applying Fibonacci sequence as taught by Kermode to segments to be broadcast such that each segment is repeatedly transmitted in a looping fashion over a one of the transmission channels. The rate of transmission is equal to or greater than the playback rate, and the lengths of the segments are chosen such that: (i) the receiver tunes into no more than a fixed number of channels (preferably two) at any one time; (ii) the receiver tunes into a new channel only after an entire segment has been received from a previous channel; and (iii) until a maximum segment length is attained, data is received from no fewer than two channels. The segments are sequentially presented even as new segments are being downloaded. When the display rate is equal to the transmission rate, it is found that the foregoing conditions are satisfied when the relative lengths of the segments form a modified Fibonacci sequence as taught by Kermode.

Referring to claims 16 and 17,

Keeping in mind the teachings of Payton as stated above, although the Payton teaches computing the fractal channel packing algorithm having an aspect of tree selection and expansion as stated above, it fails to specifically teach wherein the merge tree is an infinite Fibonacci merge tree. The reference Kermode teaches, download and merge by stating "Segments are preferably downloaded at a rate r(n) at least equal to the playback rate, and desirably faster than the playback rate. Operation of the invention in a regime where r(n)=1 is illustrated in FIG. 3. Each of a series of segments 0, 1, 2, 3 is repeatedly transmitted over an associated channel P0, P1, P2, P3. As shown in the figure, the segment 0 has a relative length of 1, segment 1 has a relatively length of 2, etc., in accordance with the truncated Fibonacci sequence noted above. The segments are not, however, downloaded synchronously. As a result, the shaded areas representing download are not contiguous with the partition loops. Instead, download of segment 0 is begun at an arbitrary time t-1 (e.g., when a subscriber has activated his set-top box) and continues into the next segment transmission." (col.7, lines 6-43). The reference also teaches that "The relative length L(n) of segment n is given by the series function where r(n) is the download rate (expressed as a multiple of the playback rate) for segment n. For r(n)=1 (download rate playback rate), this function produces a Fibonacci sequence missing the first element: f(n)=[1, 2, 3, 5, 8, 13, 21, 43, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181, 6765, 10946 . . .]. Since segments can grow very quickly in size, it is frequently necessary or useful to impose an upper limit Won the relative partition size. In this case, the relative length L(n) is given by min(f(n), W)--that

is, segments that would otherwise be longer are "clipped" to a length of W.", (col. 6, lines 45-65). Thereby, the reference teaches that the Fibonacci sequence used for merge tree is infinite in nature. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Payton by applying Fibonacci sequence as taught by Kermode to segments to be broadcast such that each segment is repeatedly transmitted in a looping fashion over a one of the transmission channels. The rate of transmission is equal to or greater than the playback rate, and the lengths of the segments are chosen such that: (i) the receiver tunes into no more than a fixed number of channels (preferably two) at any one time; (ii) the receiver tunes into a new channel only after an entire segment has been received from a previous channel; and (iii) until a maximum segment length is attained, data is received from no fewer than two channels. The segments are sequentially presented even as new segments are being downloaded. When the display rate is equal to the transmission rate, it is found that the foregoing conditions are satisfied when the relative lengths of the segments form a modified Fibonacci sequence as taught by Kermode.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok B. Patel whose telephone number is (571) 272-3972. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abp
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